Catalogue no. 12-002-X

The Research Data Centres Information and Technical Bulletin

Spring 2009, vol. 4, no. 1

Statistics Canada
Statistique Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website at www.statcan.gc.ca, e-mail us at infostats@statcan.gc.ca, or telephone us, Monday to Friday from 8:30 a.m. to 4:30 p.m., at the following numbers:

Statistics Canada's National Contact Centre

Toll-free telephone (Canada and United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369

Local or international calls:

Inquiries line	1-613-951-8116
Fax line	1-613-951-0581

Depository Services Program

Inquiries line	1-800-635-7943
Fax line	1-800-565-7757

To access this product

This product, Catalogue no. 12-002-X, is available free in electronic format. To obtain a single issue, visit our website at www.statcan.gc.ca and select "Publications."

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "About us" > "Providing services to Canadians."

Statistics Canada
Research Data Centres Program

The Research Data Centres Information and Technical Bulletin

Spring 2009, vol. 4, no. 1

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2009

All rights reserved. The content of this electronic publication may be reproduced, in whole or in part, and by any means, without further permission from Statistics Canada, subject to the following conditions: that it be done solely for the purposes of private study, research, criticism, review or newspaper summary, and/or for non-commercial purposes; and that Statistics Canada be fully acknowledged as follows: Source (or "Adapted from", if appropriate): Statistics Canada, year of publication, name of product, catalogue number, volume and issue numbers, reference period and page(s). Otherwise, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form, by any means—electronic, mechanical or photocopy—or for any purposes without prior written permission of Licensing Services, Client Services Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

April 2009

Catalogue no. 12-002-X, vol. 4, no. 1
ISSN 1710-2197

Frequency: Irregular

Ottawa

La version française de cette publication est disponible sur demande (nº 12-002-X au catalogue).

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

About the Information and Technical Bulletin

The Research Data Centres Information and Technical Bulletin is a forum for current and prospective users of the centre to exchange practical information and techniques for analyzing datasets available at the centres. The bulletin is published twice per year, in the spring and fall. Additional special issues on timely topics may also be released on an occasional basis.

Aims:

The main aims of the bulletin are:

- to advance and disseminate knowledge surrounding Statistics Canada's data;
- to exchange ideas among the Research Data Centre (RDC) user community;
- to support new users of the RDC program; and
- to provide an additional means through which RDC users and subject matter experts and divisions within Statistics Canada can communicate.

Content:

The Information and Technical Bulletin is interested in receiving articles and notes that will add value to the quality of research produced at the Statistics Canada Research Data Centres and provide methodological support to RDC users.

Topics include, but are not limited to:

- data analysis and modeling;
- data management;
- best or ineffective statistical, computational, and scientific practices;
- data content;
- implications of questionnaire wording;
- comparisons of data sets;
- reviews on methodologies and their applications;
- problem-solving analytical techniques; and
- explanations of innovative tools, using surveys and relevant software available at the RDCs.

Those interested in submitting an article to the Information and Technical Bulletin are asked to refer to the Instructions for authors.

The editors and authors would like to thank the reviewers for their valuable comments.

Editor: James Chowhan
Associate editors: Denis Gonthier, Heather Hobson, Logan McLeod

Table of contents

Articles

Bradley A. Corbett, and Michael A. Busseri
Tracking Repeatedly Measured Variables in the National Longitudinal Survey of Children and Youth: an Illustration Based on Volunteering during Adolescence 6

Kailing Shen
Customized Duration Data Construction: An Example of Deriving Unemployment Insurance Variables Using SPSS 11

Editorial committee, Instructions for authors 18

Tracking Repeatedly Measured Variables in the National Longitudinal Survey of Children and Youth: an Illustration Based on Volunteering during Adolescence

By Bradley A. Corbett,[1] and Michael A. Busseri[2]

Abstract

Researchers are able to examine changes in trends over time, through the examination of responses to repeatedly-asked questions, among the same respondents, over several cycles of longitudinal data. Working with these repeatedly-measured responses can often be challenging. This article examines trends in youth's volunteering activities, using data from the National Longitudinal Survey of Children and Youth, to highlight several issues that researchers should consider when working with repeated measures.

1. Introduction

Longitudinal analysis using the National Longitudinal Survey of Children and Youth (NLSCY) requires linking a respondent's information across several survey cycles. This information, or repeatedly measured variables, can be found in a number of possible data files produced by the NLSCY.[3] For a researcher to create a new dataset comprised of repeated measures, the name of the repeated measure, and the data file in which the repeated measure is located, must be known for each cycle being used in the analysis. In this paper, we discuss several challenges with creating a longitudinal dataset from the NLSCY using an example of self-reported volunteer activities for adolescents aged 12 to 19.

Organized activities, such as volunteering and community service, can provide positive developmental contexts (Mahoney et. al., 2006). The NLSCY provides an opportunity to examine changes in population-based trends over time in the involvement of adolescents in organized activities. To conduct this analysis, repeated measures for the same individual needs to be tracked over time to determine if there are changes in their volunteering behaviour.

Information for the same individual can be identified in different NLSCY data files by using the unique person identifier called 'persruk'. The 'persruk' variable allows the researcher to merge variables from multiple data files.

In addition to identifying data from the same individual over time, the researcher must consider three additional issues. First, the researcher must identify which NLSCY cycles the variables of interest were collected. Second, the researcher must evaluate the consistency of the

1. Correspondence author Bradley A. Corbett, University of Western Ontario Research Data Centre, 1030 Social Science Building, University of Western Ontario, 1151 Richmond St., London, Ontario, Canada N6A 5C2. (519) 850-2971. bcorbet@uwo.ca, affiliations Statistics Canada, Research Data Centre and Department of Sociology, University of Western Ontario

2. Brock Research Institute for Youth Studies

3. Five cycles of data were available when this article was written.

wording of the questions and the response options across cycles. Third, the researcher must identify the variable name used for the repeated measure in each cycle. The variable naming convention in the NLSCY is formed in part by the location of the survey question and by the survey instrument used to collect responses to the question. For some variables, tracking a repeated measure across cycles for the same individual is relatively straight-forward because the identical question is used in each cycle and only the first letter of the variable name changes between cycles.[4] In other cases, the situation is more complex.

2. An example using volunteer activities for adolescents aged 12 to 15

Researchers who wish to include individuals from multiple age-levels within each cycle must identify the variable name for the measure of interest for each age-level within each cycle. Even if the same survey question is phrased identically across cycles, the same survey question can have two different variable names within the same cycle. The difference in variable name depends on the survey instrument used to collect responses. For example, a self-complete questionnaire is the survey instrument used to collect information on volunteer activities for adolescents aged 12 to 15. However, an interviewer-administered youth questionnaire is the survey instrument used to collect the same information for adolescents aged 16 to 19. Consequently, both survey instruments ask the identical question and collect the same information but result in a different variable name.

The assessment of volunteer activities in the NLSCY are first collected at age 12 in Cycle 2, and continue through to age 19 in Cycle 5. Table 1 displays the eight volunteering measures asked in the NLSCY. The first seven questions are scored dichotomously (yes/no) while the eighth question assesses frequency of volunteering ranging from everyday to less than once a month.

Table 1 National Longitudinal Survey of Children and Youth volunteering questions by survey cycle

	Cycle			
In the past 12 months have you helped without pay by ...	2	3	4	5
1. Doing activities at school	Y	Y	Y	..
2. Adopting a cause	Y	Y	Y	Y
3. Fund raising	Y	Y	Y	Y
4. Helping in your community	Y	Y	Y	Y
5. Helping neighbours or relatives	Y	Y	Y	Y
6. Doing another volunteer activity	Y	Y	Y	Y
7. I haven't done any of these activities without pay	Y	Y	Y[1]	Y[1]
8. During the past 12 months, how often have you volunteered without pay?	..	..	Y	Y

Y question was included for all age-groups

Y[1] question was included for some age-groups

.. not available for a specific reference period

4. For a review of the NLSCY variable naming conventions see the Cycle 5 User Guide, pp. 45-48.

Five of the volunteering questions, questions 2 through 6, are asked of respondents aged 12 or older in Cycles 2 through 5. Responses to these five questions allow for the analysis of within-person change in volunteering over time, as well as an estimation of population-level trajectories in volunteer participation for adolescents. Two additional questions, 1 and 7, are asked only for certain age groups in certain cycles. For example, question 1 was only asked of respondents aged 12 and 13 in Cycles 2, 3, and 4.

Table 2 provides a breakdown for the dichotomous volunteer activity variables by survey cycle and age group. As can be seen, the same question can have a different variable name within the same cycle depending on the respondent's age. The names of the volunteering variables for adolescents aged 15 and under are different from adolescents aged 16 and older. For example, question 5 has the name (DATCBQ5E) in Cycle 4 for adolescents aged 12 to 15, but has a different name (DACYD12D) for adolescents aged 16 and 17. This difference arises as responses to the question being captured by two different survey instruments.

In addition to within-cycle differences in variable names, the variable naming convention changes across cycles. For example, to track an individual response for item 2, the response of adolescents aged 12 in Cycle 2 is provided in the variable BATCBQ5B. A response for the same adolescents in Cycle 3, when they are age 14, is found in the variable CATCBQ5B. Note how only the first letter of the variable name changes, indicating a change in the cycle. However, a response by the same adolescents in Cycle 4, when they are age 16, is found in the variable DACYD12A. This variable name deviates substantially from the previous two because of the change in survey instrument, from the self-complete questionnaire to the interviewer-administered youth questionnaire.

Another consideration is that the variables for different age groups can exist in different data files. For example, in Cycle 5 the variable EATCBQ5B is located in the 10-to-19-year-old data file (NLSCY_02_05_1019_mas) for adolescents aged 12 to 15. However, responses for the corresponding variable for adolescents aged 16 to 19, EACYD12A, are located in the Cycle 5 longitudinal file (NLSCY_02_C5_LONG_mas).

Table 2 National Longitudinal Survey of Children and Youth Dichotomous Volunteering Variable Names by Cycle, Age Group, and Type of Volunteering

		Type of volunteering[1]						
Cycle	Age group	At school	Adopt cause	Fund-raising	Help in community	Help neighbours	Another activity	None without pay
2	12 to 13 years	BATCBQ5A	BATCBQ5B	BATCBQ5C	BATCBQ5D	BATCBQ5E	BATCBQ5F	BATCBQ5G
3	12 to 13 years	CATCBQ5A	CATCBQ5B	CATCBQ5C	CATCBQ5D	CATCBQ5E	CATCBQ5F	CATCBQ5G
	14 to 15 years		CATCBQ5B	CATCBQ5C	CATCBQ5D	CATCBQ5E	CATCBQ5F	CATCBQ5G
4	12 to 13 years	DATCDQ5A	DATCBQ5B	DATCBQ5C	DATCBQ5D	DATCBQ5E	DATCBQ5F	DATCBQ5G
	14 to 15 years		DATCBQ5B	DATCBQ5C	DATCBQ5D	DATCBQ5E	DATCBQ5F	DATCBQ5G
	16 to 17 years		DACYDI2A	DACYDI2B	DACYDI2C	DACYDI2D	DACYDI2E	...
5	12 to 13 years	...	EATCBQ5B	EATCBQ5C	EATCBQ5D	EATCBQ5E	EATCBQ5F	EATCBQ5G
	14 to 15 years	...	EATCBQ5B	EATCBQ5C	EATCBQ5D	EATCBQ5E	EATCBQ5F	EATCBQ5G
	16 to 17 years		EACYDI2A	EACYEI2B	EACYEI2C	EACYDI2D	EACYDI2E	...
	18 to 19 years		EACYDI2A	EACYEI2B	EACYEI2C	EACYDI2D	EACYDI2E	...

1 The seven dichotomously-scored volunteering variables are shown. The eighth volunteering measure, a global frequency rating, is not shown.

... not available for a specific reference period

3. Conclusion

In summary, researchers wishing to examine within-person changes for the same variable over time should take care to check under different variable names and in different data files if responses appear to be systematically missing for specific age groups. Researchers are encouraged to carefully review the NLSCY documentation and codebooks to ensure the question and responses remain consistent across cycles for repeated measures. Some repeated measures are only collected by certain survey instruments or in certain cycles. Moreover, repeatedly measured variables may also exist under other variable names or in another data files.

In conclusion, we recommend that researchers, who are planning a longitudinal analysis of repeatedly measured variables using the NLSCY, first determine the availability of the variables of interest across survey cycles. In our own work, we found a chart similar to Table 2 was essential to tracking the volunteering variables across age groups and cycles. Indeed, not all of the volunteering variables we planned to analyze were asked of each age group in each cycle. By completing such a chart, researchers may gain vital information about the availability of key variables for their analyses and the feasibility of the proposed study. Researchers are encouraged to include a chart like Table 2 with their research proposal for data access through the Statistics Canada Research Data Centres program.

References

Mahoney, J. L., Harris, A. L., & Eccles, J. S. (2006). Organized activity participation, positive youth development, and the over-scheduling hypothesis. Social Policy Report, 20, 3-30.

Statistics Canada. 2005. "Microdata User Guide, National Longitudinal Survey of Children and Youth, Cycle 5, September 2002 to June 2003." Special Surveys Division. Ottawa.

Customized Duration Data Construction: An Example of Deriving Unemployment Insurance Variables Using SPSS

By Kailing Shen[1]

Abstract

Developed initially for the author's research on Unemployment Insurance (UI), this article summarizes a set of procedures for constructing customized duration data, using SPSS software and the Survey of Labour and Income Dynamics (SLID). These procedures could be used to merge, deduce, or match multiple duration datasets.

1. Introduction

The Survey of Labour and Income Dynamics (SLID) is one of the most important Canadian panel data for labour market studies, for which the impacts of unemployment insurance (UI) policy has remained one of the central issues. But there is one major data challenge in using SLID for UI studies -- derivation of UI spells[2] and UI variables.[3]

This paper provides an outline of the data construction procedures I developed while using SLID for UI studies. It also provides a general set of procedures for customized duration data construction. Although the examples here are closely related to UI and labour market studies, the intuitions behind are expected to be useful in other areas as well.

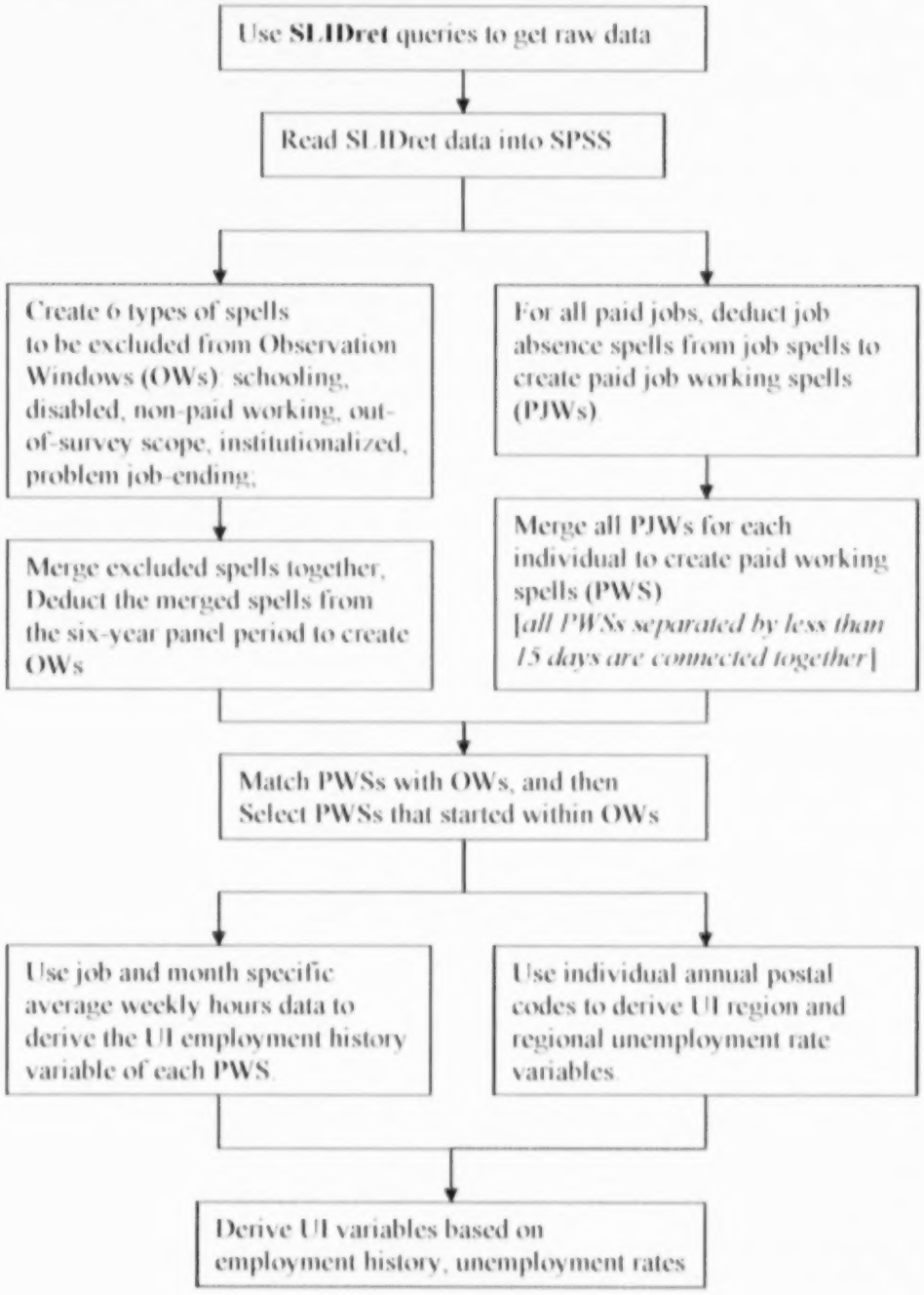
In section 2, I first outline the overall process of UI spells derivation. Then, section 3 presents a set of programming procedures for duration data manipulation. Finally, section 4 concludes by discussing the possibility of applying the techniques here using computer languages other than SPSS.

1. I thank Darren Lauzon for helpful comments and suggestions.

2. Unfortunately the weekly vector of labour force status information readily available in SLID isn't useful in the derivation of UI spells. The reason is that UI only concerns paid employment, while SLID's definition of employment includes paid-employment as well as self-employment and other forms of unpaid employment.

3. The derivations of UI spells and that of UI variables are closely related as UI variables are always defined as: at week X of some UI employment/unemployment spell. Furthermore, the precision of UI variables closely depends on that of the UI spells derived.

2. Outline of Constructing UI Spells from SLID


Use **SLIDret** queries to get raw data
Read SLIDret data into SPSS
Create 6 types of spells to be excluded from Observation Windows (OWs): schooling, disabled, non-paid working, out-of-survey scope, institutionalized, problem job-ending;
For all paid jobs, deduct job absence spells from job spells to create paid job working spells (PJWs).
Merge excluded spells together, Deduct the merged spells from the six-year panel period to create OWs
Merge all PJWs for each individual to create paid working spells (PWS)
[*all PWSs separated by less than 15 days are connected together*]
Match PWSs with OWs, and then Select PWSs that started within OWs
Use job and month specific average weekly hours data to derive the UI employment history variable of each PWS.
Use individual annual postal codes to derive UI region and regional unemployment rate variables.
Derive UI variables based on employment history, unemployment rates

Some explanations are in order here:

First, the SLIDret application is provided by Statistics Canada for retrieving SLID data, which is organized as a relational database. Each SLID query has to specify whether the query is in terms of person, person-job, or person-job absence, etc. Since we are using all of these types of data, multiple SLIDret queries are needed. Also, there is a limit on the maximum number of variables that can be included in each query. This also means several smaller sized queries are often easier to get than one big one.[4]

Second, all the spells referred above are defined in calendar terms, starting date and ending date. The term 'merge' means to add the set of calendar dates covered by multiple spells together, while 'deduct' means to delete one set of dates from another set of dates (if there are overlappings).

Third, several -- but not all -- institutional features of the Canadian unemployment insurance program are considered. Specifically, spells not eligible for receiving UI benefits are excluded from the Observation Windows (OWs), and, the connection of Paid Working Spells (PWSs) separated by less than 15 days is meant to match the two-week waiting period of any initial UI benefit payment period.

Last, the SLID does have an individual UI region variable, but it is uniformly defined according to the UI rules in 1996 June. Since 1993, there are 3 different sets of boundaries in effect: 1994 July, 1996 June, and 2000 July. Therefore, here I use postal code data to backup the applicable UI regions at each point of time.

Overall, the derivation of UI variables are closely based on the creation of OWs and UI eligible spells, that is, PWSs. Once the spells are constructed, it is straightforward to derive each individual worker's weekly UI treatment variables by matching these spells with on-going UI unemployment rates.

3. General procedures of duration data manipulation

Many of the steps outlined in section 2 involve duration data manipulation, such as merging, deduction, and matching (that is to create correspondence between two logically independent or dependent sets of duration data sets, such as OWs and PWSs, PJWs and PWSs). These types of operations are expected to make it possible for researchers to fully utilize the potential of micro-panel data by creating customized spells. Unfortunately, there isn't much documentation in this area. Here are some of the related programming procedures I developed using SPSS.

4. This could be a serious problem for monthly variables. For example, there will be 72 (6 years * 12 month) variables for schooling flag. I created a separate query for this variable only, to accommodate the limitation of SLIDret.

Merging spells with no overlapping

Let each record in file a.sav have 3 fields: personid, startdate, and enddate. We know for sure for each personid, there is no overlapping of the periods covered by different records. We want to merge the spells within each personid, so that two spells, A and B, are merged together if and only if the next day of spell A's enddate is the startdate of spell B. This could be done as follows,

Example 1

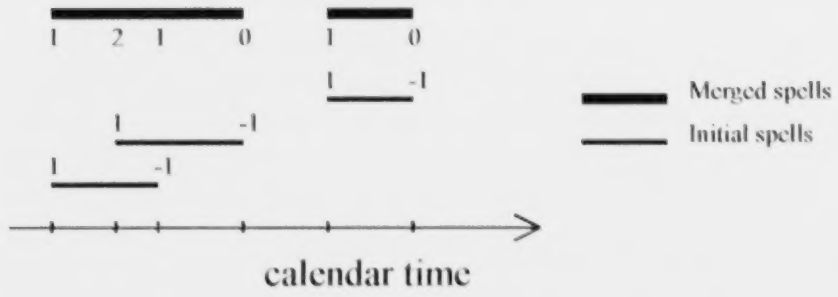
```
/*==step one: reshape the input data set==*/.
get file='a.sav'.
varstocases /make date from startdate enddate /index=datef.
compute datef=(3-2*datef).
execute.
/* now each record has 4 fields:*/.
/* personid date datef (1 if start date; -1 if end date)*/.
/*==step two: calculate lead and lag of date==*/.
sort cases by personid date datef.
split file separate by personid.
create /d_lag=lag(date 1) /d_lead=lead(date 1).
split file off.
/*==step three: select subset of dates ==*/.
compute fs=1.
if(date=date.yrday(xdate.year(d_lag),xdate.jday(d_lag)+1))&(datef=1) fs=0.
if(date=date.yrday(xdate.year(d_lead),xdate.jday(d_lead)-1))&(datef=-1) fs=0.
select if(fs=1).
execute.
/*==step four: generate spell id for output data set ==*/.
split file separate by personid.
date O 1 2.
split file off.
compute spellid=cycle_.
compute dateindex=obs_.
execute.
/*==step five: reshape the output dataset ==*/.
casestovars /id=personid spellid/index=dateindex.
rename variables date.1=strdate date.2=enddate.
save outfile='merged_a.sav' /keep=personid spellid strdate enddate.
```

Merging spells with overlaps

More generally, the step 2 and 3 could be modified to merge spells that potentially overlap. This is done by calculating the number of active spells at each critical date.

Figure 1 gives a visual illustration of this procedure. The thick line segments represent the merged spells while the thin ones are the initial spells. Each initial spell is transformed to a pair of signed flags. Then the merged spells are constructed from those time points where the cumulative summations of flags are 1s and 0s.

Figure 1



Example 2

```
/*==step one: reshape the input data set==*/.
/*==step two: calculate lead and lag of date==*/.
sort cases by personid date datef.
aggregate outfile='temp.sav'/break=personid date  /sumf=sum(datef).
get file='temp.sav'.
split file separate by personid.
create /csumf=csum(sumf).
create /cf_lag=lag(csumf 1) /cf_lead=lead(csumf 1).
split file off.
/* csumf is the number of active spells at each date*/.
/* cf_lag is the preceding date's number of active spells*/.
/* cf_lead is the succeeding date's number of active spells*/.
/*==step three: select subset of dates ==*/.
compute fs=1.
if(csumf>0&cf_lag>0) fs=0.
if(csumf=0&(missing(cf_lag)|(cf_lag=0))) fs=0.
if(csumf<0&cf_lead<=0) fs=0.
select if(fs=1).
execute.
/*==step four: generate spell id for output data set ==*/.
/*==step five: reshape the output dataset ==*/.
```

Deducing one type of spell from another

Deduction happens when we want to create job working spells from job spells and job absence spells. This is solved by taking start/end of job absence spells as ending/start of a job working spells.[5] The following example shows how to deduce spells in b.sav from a.sav.

Example 3

```
/*==step one: reshape the input data sets==*/.
get file='a.sav'.
compute flaga=1
add files /file=* /file='b.sav'.
if(missing(flaga)) flaga=0.
execute.
varstocases /make date from startdate enddate /index=datef.
compute datef=(3-2*datefsf).
If(flaga=0) datef=-datef.
execute.
/*==step two: generate spell id for output data set ==*/.
split file separate by personid.
date O 1 2.
split file off.
compute spellid=cycle_.
compute dateindex=obs_.
execute.
/*==step three: reshape the output dataset ==*/.
casestovars /id=personid spellid/index=dateindex.
rename variables date.1=strdate date.2=enddate.
save outfile='deduct_b from a.sav' /keep=personid spellid strdate enddate.
```

Matching two types of spells

This could happen if we need to know which jobs the workers worked in each employment spell, or which initial spells correspond to each merged spell in figure 1. The following example shows how to match spells in b.sav to a.sav.

Example 4

```
/*==step one: reshape the input data sets==*/.
get file='a.sav'.
```

5. The technique shown here only applies to the simplest case and will only be valid if: 1) each person has only one spell in a.sav; 2) for each person, his spells in b.sav is within his master spell in a.sav. Otherwise, the procedure has to be modified by applying matching techniques shown below.

```
compute flaga=1
execute.
varstocases /make startdate from startdate enddate /index=datef.
add files /file=* /file='b.sav'.
if(missing(flaga)) flaga=0.
If(flaga=1) datef=(3-2*datefsf)*spellid.
If(flaga=0) datef=0.
execute.
/*==step two: sort the merged data and generate the linking id==*/.
sort cases by personid(a) date(a) datef(d).
split file separate by personid.
create /cspellid=csum(datef).
split file off.
/*==step three: select the proper records and save==*/.
select if(flaga=0).
compute spellid=cspellid.
execute.
save outfile='match_b to a.sav' /keep=personid spellid strdate enddate.
```

4. Conclusion

This article provides an outline for constructing UI variables using SLID data. It also provides a set of procedures for duration data manipulations using SPSS software. Specifically, the ability of SPSS to restructure a dataset to compute lag and lead values are of critical importance here. Therefore, it relies on finding similar techniques to implement the ideas presented here in other computer languages, such as SAS or STATA.

Instructions for authors

The Information and Technical Bulletin will accept submissions for articles that address methodological or technical topics related to the datasets that are available at the Research Data Centres.

Language of material:

Manuscripts may be submitted in English or French. Accepted submissions will be translated into both official languages for publication.

Length of submissions:

The maximum length of submitted articles should not exceed 20 pages, double-spaced, excluding programs and appendices. In addition to in-depth explanations of technical issues, the bulletin also accepts short (3 page) submissions that provide quick solutions to analytical problems and commentary from fellow researchers about material previously released in the bulletin.

File formats and layout of text:

Manuscripts must be submitted in Microsoft Word (.doc) and may be sent by regular mail on a disk or CD or by email.

Manuscripts must have a cover page showing the names of the authors, their primary institution of affiliation, and the contact information (telephone number, mailing address and e-mail address) of the lead author.

Manuscripts must be prepared in 12pt Times New Roman, double-spaced, with 1-inch (2.5 cm) margins.

Titles should have sentence-case capitalization (e.g., Bootstapping made easy…).

Boldface type should only be used for headings. Underlining and italics are not to be used for headings.

Footnotes and references should be single-spaced and formatted according to *The Canadian Style: A Guide to Writing and Editing*.

File formats and layout of tables and charts

Tables and charts must be submitted in Microsoft Excel worksheets (.xls) or in comma-separated value (.csv) format. Each file must be clearly named table1, chart6, etc.

Tables and charts may be sent by regular mail on a disk or CD, or by e-mail.

Do not insert tables or charts into the text, but indicate their location in the text by inserting the title, followed by the filename in parentheses, e.g.,

Chart 6. Chocolate consumption by children, Canada, 2000 (chart6)

Mathematical expressions

All mathematical expressions should be set out separate from paragraph text. Equations must be numbered, with the number appearing to the right of the equation flush with the margin.

Style guide

Please follow *The Canadian Style: A Guide to Writing and Editing*. It is available for purchase by contacting Government of Canada Publications, Public Works and Government Services Canada.

Address for submission

Manuscripts and all correspondence relating to the contents of the Bulletin should be sent to the Editorial Committee

- by email to rdc-cdr@statcan.ca

The review process

The editorial committee conducts the initial article review process. Editors may solicit past authors of the Bulletin or subject matter experts to participate in the process. The articles submitted to the Bulletin are reviewed for accuracy, consistency, and quality.

Upon completion of the initial review, the articles undergo both peer and institutional review. Peer reviews are conducted in accordance with Statistics Canada's Policy on the Review of Information Products. Institutional reviews are be conducted by members of senior management within Statistics Canada in order to ensure that the material does not compromise the Agency's guidelines of standards, or reputation for non-partisanship, objectivity and neutrality.

For more information about the review process, please contact the Editorial Committee at the address above.